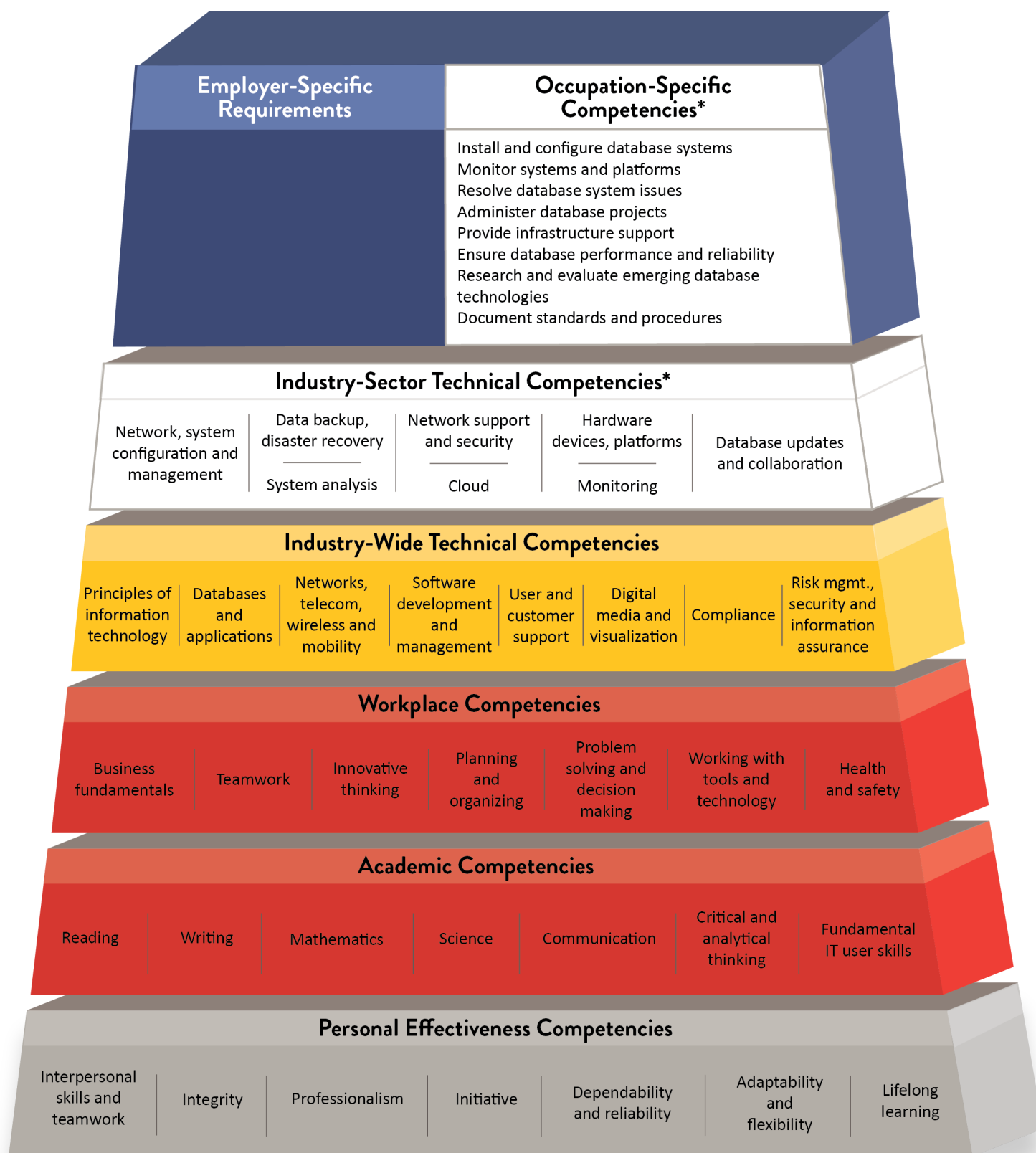


Minnesota Dual-Training Pipeline

Competency Model for Information Technology

Occupation: Database Administrator



Based on: Information Technology Competency Model, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/information-technology.

Competency Model for Database Administrator

Database Administrator – An individual responsible for directing or performing all activities related to maintaining a successful database environment. This professional ensures an organization's database, and its related applications, operate functionally and efficiently. This person also plans, coordinates, and implements security measures to safeguard computer databases.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

Industry-Sector Technical Competencies

Related Instruction for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee's current or intended occupation.

- **Network/system configuration and management** – Understand the design of a computer network, the framework for the specifications of a network's physical components and their functional organization and configuration, principles, procedures, and data formats.
- **Data backup, disaster recover** – Know how to document maintenance, organize duplicated documents and tools in safe places, and a documented process or set of procedures to recover and protect a database infrastructure in the event of a disaster.
- **Systems analysis** – Know the act and process of analyzing complex processes or operations to improve efficiency, especially by applying a computer system.
- **Network support and security** – Know the policies adopted to prevent and monitor unauthorized access, misuse, modification, or denial of a computer network and network-accessible resources. Network security involves the authorization of access to data in a network, which is controlled by the database administrator.
- **Cloud** – Understand a scalable content database running on a cloud computing platform.
- **Hardware devices, platforms** – Able to use compatible hardware on which software applications can be run.

- **Monitoring** – Understand the established process to identify and react to potentially malicious activity.
- **Database updates and collaboration** – Understand the integration of various communications methods with collaboration tools such as virtual white boards, real-time audio and video conferencing, and enhanced call control capabilities.

Occupation-Specific Competencies

On-the-Job Training is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Install and configure database systems** – Know how to install and maintain database software by ensuring proper integration with hardware and operating systems.
- **Monitor systems and platforms** – Understand the established process to identify, assess, adjust, maintain, and support databases and platforms.
- **Resolve database system issues** – Know how to identify, scrutinize, and rectify problems with databases.
- **Administer database projects** – Able to organize a process of initiating, planning, executing, controlling, and closing the work of a team to develop and maintain a database.
- **Provide infrastructure support** – Understand and work with end business users to ensure seamless infrastructure operation.
- **Ensure database performance and reliability** – Able to verify that the database network and systems are performing well and seamlessly.
- **Research and evaluate emerging database technologies** – Know how to identify innovative solutions that enhance performance, scalability, and security, while aligning with evolving business and industry standards.
- **Document standards and procedures** – Be able to create and maintain documentation for database configurations, policies, and troubleshooting protocols.

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